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AUTHOR	Nakamura, Charles Y.
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ABSTRACT

This report presents the rationale, methods, and results of research that was planned to develop a way of identifying relatively effective children. The report contains the conceptual bases and development of the Hypothetical Situation Questionnaire (HSQ) as the means for distinguishing effective children. The HSQ contains three subscales that measure social orientation, task orientation, and self-assurance. These subscales were combined to yield profiles identifying children who were: (1) effectively responsive in situations to both social and task components; (2) primarily task oriented and effective or ineffective; and (3) primarily socially oriented and effective or ineffective. Experiments using the HSQ indicated that the instrument could differentiate types and levels of effectiveness among children. Identifications of subject variables and their specific interactions with situational variables permitted reliable predictions of the behavior patterns of the children. (Author/PC)

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Implications of the assessment of social vs. task orientation for research on socialization processes and educational planning for individual children

Charles Y. Nakamura

University of California, Los Angeles

Los Angeles, California 90024

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1. Nakamura, C. Y.,& Finck, D. Effect of social or task orientation and evaluative or nonevaluative situations on performance. Child Development, 1973, 44, 83-93.

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Summary

This report presents the rationale, methods, and results of research that was planned to develop a way of identifying relatively effective children. Evidence is offered that indicates that the endeavor was satisfactorily successful.

The initial part of the report covers the conceptual bases of the concept of effectiveness and the development of a Hypothetical Situation Questionnaire (HSQ) as the means for distinguishing effective children. The major part of the report is given to the presentation of a series of experiments designed to test the construct and predictive validities of this measurement instrument. The results were promising.

The HSQ contains three subscales that measure social orientation, task orientation, and self-assurance. These are combined to yield profile scores for each subject that is the basis for distinguishing groups of children that are effective in various ways. The profiles identified children who were: effectively responsive in situations to both social and task components, primarily task oriented and effective or ineffective, and primarily socially oriented and were effective or ineffective depending upon the nature of the situation.

Examples of a few of the more interesting findings will be briefly mentioned. The children identified on the HSQ as the most effective were able to respond differentially to the social or the task components of the situations into which they were introduced. They were capable of being either task oriented and performing very efficiently or being socially oriented and responding sociably as the situation called for. In contrast, the primarily task oriented children responded in a highly task achieving manner regardless of the differences in the situations. The primarily socially oriented children were overly sensitive to the social evaluative component in the situations and their learning activities were negatively affected by this sensitivity. However, if socially relevant cues were available in the situation, they were responsive to them and the cues facilitated their learning.

A study using field-dependent-independent measures showed that the primarily task oriented children scored in the field-independent direction while the socially oriented ones scored in the field-dependent direction as typically expected. However, most interestingly, the group identified as the most effective children also scored in the field-dependent direction, as anticipated from the rationale of the HSQ. This result contradicts the many findings reported inthe literature that have associated very negative characteristics with people who are field-dependent. The present study demonstrated that many effective children, who are both task and socially oriented, do score as field-dependent, thus calling for caution in the interpretation of the literature on this topic of field-dependence.

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An experiment on the experimenter bias effect demonstrated that the source of the effect could be largely attributed to the primarily socially oriented children while the effect was not found in the primarily task oriented children.

These experiments indicated that the HSQ could differentiate types and levels of effectiveness of children. These identifications of subject variables and their specific interactions with situation variables permitted reliable predictions of the behavior of the children. These results are consistent with the emphasis given by Mischel (1973) to the importance of having conceptual formulations that account for both subject and situation variables for establishing the strongest base for predicting behavior.

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Several persons contributed to our work at various times over the years of this research. The dedicated efforts of Nina Auth, Helane Braveman, Anne Mason, and Michael Vandeman is gratefully acknowledged.

A major colleague from the beginning and throughout the project, without whom this work would not have been possible is Doris Finck. To her, I express my heartfelt gratitude.

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Introduction

One purpose of this research was to develop procedures for identifying relatively effective children. This was associated with our longer range interests in the socialization processes that may contribute to the development of various types of effective persons. It is expected that such knowledge may have positive implications for parental education, child rearing practices, and individualized planning for teaching children.

Within this research project, the effective child is quite narrowly defined for practical experimental reasons. Effectiveness is the ability to attend to and respond differentially and appropriately to socially oriented goals and to task oriented goals in a situation. More generally, the effective child is most capable of differentially perceiving the requirements or objectives defined by his own interests and needs as well as of those dictated by situational factors, and is most capable of flexibly attending and responding in ways to facilitate mutual goal attainment for both himself and others in the situation. For example, the child may come into a situation, evaluate the physical-personal-social goals defined by the situation and by his own needs, and realize his own capabilities and limitations in relation to those goals. This perceptiveness of the environment and awareness of self will permit the child to participate in ways that will result in the greatest mutual benefit for all concerned. If the situation required personal action, the effective child could determine whether he was best suited to take a leader or a supporter role and act accordingly. Thus, a child who is highly achievement oriented and who strives for leadership or primary recognition in all situations, irrespective of the adequacy of his talents, would be considered a less effective child than one who is capable of choosing to participate as a leader or a supporter of another leader based upon his assessment of the situational requirements, the mutuality of the goals, and his own talents relative to others available in the situation.

Although much more difficult to define adequately, in the broadest and ideal sense, effective persons are those who are capable of living by principles that emphasize the mutual enhancement of happiness for all people; persons who are capable of living, behaving, deciding in directions that optimize the evolution of such a society.

Consistent with the purposes of this research to develop procedures for identifying effective children, this report is organized to describe the methods used in the construction of the measures, the assessment of the reliabilities, and a series of experiments that established the validities of the measures.

The Hypothetical Situation Questionnaire

Background

Historically, largely for practical reasons, most assessment

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instruments have been developed to identify and evaluate the ineffective or disturbed child. Most of the problem resolution oriented research has also been directed more toward the troubled than toward the capable. In recent years there has been an increasing interest in positive personal attributes and prosocial behaviors such as creativity, empathy, curiosity, regression in the service of the ego, and moral and altruistic behaviors. Most of this work has not yet progressed to the comprehensive study of individual differences on these dimensions. The main strategy in previous experiments has typically involved tests of differences between gross categories of subjects within given dimensions of the type mentioned above. The proposed research is designed to work toward the ascertainment of individual differences on certain dimensions of personal characteristics that are presumed to be associated with effective behavior.

It is recognized that there are many ways in which a person may be effective. There is, no doubt, a wide range of criteria for effective behavior depending upon situational and personal requirements. For our research purposes, the effectively responsive person is described as having certain predispositions that determine how he approaches a situation and interacts in it. Upon entering a situation, he is capable of perceiving all aspects of the situation and of his own reactions to it. This enchances his perceptual objectivity and minimizes bias. The process involves awareness of one's own (internal) responses to the components of the situation and the ability to withhold reactions and judgments, until the former have been considered in conjunction with the situational variables. This permits him to be optimally free of his own conditioned responses so that the situation and its requirements can be perceived with the highest degree of veridicality. This capability would facilitate the most effective responses to the situational conditions including the range of situations from social relations to abstract problem solving. Accurate perception and adaptability are involved. This assumes, in the ideal sense, that the individual has the constitutional capability of taking all perceived aspects into account in arriving at conclusions and initiating effective action.

The research strategy was based on the assumption that for effective comprehension and prediction of behavior, it is necessary to take fully into account both subject characteristics and situational conditions. On the subject side, the objective was the differential prediction of mean scores of each of several groups of subjects assessed to have certain response predispositions. The predispositions were characteristic ways in which individuals perceive, enter into, and behave in given situations. On the situation side, the stimuli, or conditions that are relevant or irrelevant to individuals having these predispositions are defined.

Situational variables have been thoroughly treated over the last three decades of emphasis on experimental control of behavior. The study of personality traits, however, has generally been unfruitful and in ill repute. Trait measures have not been found to be useful

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predictors of behavior. The problem is at least two fold. Many of the predictions from traits have used single or double dimensional indices. For example, the "single" dimension of creativity, or of field-dependence-independence; or the double dimension of the two into the fourfold combinations. There has been some work on trait profiles but this has not been pursued sufficiently thoroughly to adequately develop the subscales for the traits in the profile or the prediction criteria were not clearly definable because of the absence of a rationale for the meaning of the profiles (e.g. MMPI, Strong Vocational Interest Inventory, and numerous personal adjustment inventories such as the California Personality Inventory).

A second limitation of traits is that there has been insufficient attention given to the relation of the traits to situational variables. The present research was planned to overcome some of these types of shortcomings in our study of effective behavior.

The research design focused on the reliable assessment of specific predispositions or characteristics of the child and the validation of the assessment instruments by a series of experiments. Each of the above aspects of the research will now be delineated in subsequent sections. Within each section, an introduction of the aims will be followed by a description of methods, results and discussion of the findings.

Assessment of Predispositions

The children's predispositions that were of interest in this research were measured by the Hypothetical Situation Questionnaire (HSQ). A copy of the HSQ is in Appendix A. The HSQ is comprised of three subscales with six items in each subscale. Each item consists of a hypothetical situation to which the child indicates what he would do in the situation. The three subscales were designed to differentiate children on social orientation, task orientation and self assurance. The subscales and items will be discussed in greater detail later.

A bit of specific history of the conceptual beginnings of the Hypothetical Situation Questionnaire may be helpful to clarify its place in this research. During our research on the relative value of given reinforcers in problem solving situations we were able to identify children that were primarily task oriented or socially oriented. The task oriented were primarily concerned with their <u>own</u> evaluation of their performance in terms of accuracy. They were interested in the experimenter insofar as the E was a source of information by which the child could evaluate his own performance. It made no difference whether the information came from the E or from a mechanical signal device. In contrast, the socially oriented child was evaluation conscious in that he was interested in or dependent upon the experimenter as an external evaluator. The child seemed to be affected more by the attitude, demeanor, etc. of the experimenter than by the factual information of the accuracy of his performance on the problem. An experiment by Todd and Nakamura (1970) followed upon these observations. In accordance with some hypotheses based on social motivation theory, it was found that children rated as dependent by

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teachers (considered more dependent on social than informational aspects of reinforcers than independent children) responded more to the affective component in the social reinforcer than to the informational component than did independent children. Furthermore, the performance of the dependent children was adversely affected when the affective and informational components were discrepant (e.g., E said "incorrect" in a very positive tone of voice and demeanor, or said "correct" in a cold tone and demeanor), but not when the two components were consistent (e.g., E said "correct" in a positive tone and demeanor). In contrast, the independent children performed equally well under the various combinations of the social components of the reinforcers.

This provided information on the question of the relative effectiveness of different children in given situations and lent confidence to the conceptual relevance of the social vs. task orientation dimensions of our subscales in the HSQ. At the inception of our attempts to devise procedures to assess a child's predispositions for sensitivity to social stimuli and social evaluation vs. tendency toward task orientation, three approaches were considered.

1. Children could be observed and rated by teachers or trained observers in a Natural situation, such as in a nursery school or classroom, by either global or time sampling ratings of specific behaviors.

2. Children could be scored in Experimentally Controlled conditions where all Ss are put through identical, specifically structured situations.

3. Children could be scored on their own responses to Hypothetical situations.

There were several reasons for arriving at the decision to develop the third, Hypothetical situation type of measure of predispositions.

a. The items could be logically developed. Thus in contrast to empirical methods, much of the preliminary work could be done without using up experimenter time or subjects. Funds were limited at the time.

b. It takes no longer to administer than the self report questionnaire, and it can be group administered. Thus it is more economical than the use of the Natural or Experimentally Controlled conditions 1 and 2 above.

c. Although the items are longer than those in the usual inventories, and thus must be fewer in number, the description of the hypothetical situation provides sufficient structure and context to actually increase the probability of obtaining higher reliabilities than the brief item self report scales. Items of this type in a parent expectation questionnaire (Nakamura & Rogers, 1969) yielded quite high reliabilities even though the scales had only 10 items.

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d. Good motivation of the child is obtained since the hypothetical situations can be made interesting to the child.
e. Wyer (1965) had shown the adequacy and the potential utility of hypothetical social situations in work with children.
f. Finally, we could utilize the approaches described in Numbers 1 and 2 above as a means of testing the predictive validity and construct validity of the Hypothetical Situation Questionnaire. This would also take into account one weakness of the hypothetical method. That is the question of whether the child would actually behave as he reports he would in the hypothetical situation. This would be directly assessed by a test of the construct validity of the scales in parallel situations constructed in the laboratory.

In describing the development of the HSQ, the rationale for profile categories based on the three subscales, the subscales and profile reliabilities, and the tests of the validities of these will be presented in that order. The subjects on which these data were obtained were children in the age range of 9 to 12 years, largely from the University Elementary School at U.C.L.A. The children are from middle and upper middle class backgrounds.

Rationale for profile scoring of the three subscales

The three subscales were: Social orientation, Task orientation, and Self-Assurance. Socially oriented children are considered to be sensitive to social stimuli and/or to potential evaluation by others. Task oriented children are considered to be primarily interested in the task per se, likely to be achievement oriented, and less concerned with social evaluative implications of their task performance. Self assured children are considered to be generally confident, competent, and relatively unconcerned about others' evaluations. When children are scored High or Low on each of the three subscales, their combination of scores can place them in one of eight categories (six major and two secondary) that have been developed. The six major categories were given special attention for two reasons. First, we had a priori assumptions about behaviors of children who obtained these combinations. Second, it turned out that most of the Ss obtained scores that placed them in these categories. The rationale underlying the six categories was as follows:

High Social-High Task-High Assurance (HHH) Category These are the overall, most effectively responsive children. They are capable of perceiving the requirements of a situation and responding to them in an effective manner. For example, if a situation calls for application of intellectual capability in a measure of ability, they will perform at a high level. If the situation is a social one, in which effective responding requires the capability of sensitivity to social cues and relaxing noncompetitively in the situation, they will do so effectively. Results of an experiment testing parts of the above hypotheses will be given later.

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High Social-Low Task-Low Assurance (HLL) Category. These children are primarily responsive to the social aspects of a situation, particularly the possibility of being evaluated by others. Thus they especially attend to social cues. It is presumed that in situations in which social cues are irrelevant to effective performance, this social orientation will dominate and be a hindrance in their performance. However, in situations where sensitivity to relevant social cues are essential, they may respond quite effectively.

Low Social-High Task-High Assurance (LHH) Category. These children are primarily interested in the task and how successful they themselves feel they are doing on it. They are genuinely task oriented, achievement oriented, and respond to the challenge of doing well on a task irrespective of social situational factors. They will be responsive to social cues for an information seeking objective if they think such cues will aid in effective performance. The children are self assured in their capabilities and relatively little concerned about what someone else may feel about their performance. They are usually quite effective children.

Low Social-High Task-Low Assurance (LHL) Category. This is considered to be a pseudo task oriented child in contrast to the preceding genuinely task oriented child. These children lack self assurance. The low social score indicates an avoidance of social evaluative situations rather than a low interest in them. Their really deep concern about being evaluated is managed through avoidance of it by disguised interest in socially isolated tasks. These children may be erroneously perceived in a school situation as genuinely independent, task oriented students.

Low Social-Low Task-Low Assurance (LLL) Category. These are relatively ineffective children characterized by: avoidance of social evaluative situations while being highly concerned about social factors, generally poor performance in task situations, and having low self assurance.

High Social-Low Task-High Assurance (HLH) Category. The existence of children having this combination of scores was identified during the development of the Questionnaire. These children are much like the HHH effective children with the exception that their high assurance is associated with activities in familiar situations. When challenged with unfamiliar activities that are anticipated to pose difficulty or failure, they lose this assurance and their usually effective performance deteriorates.

The two additional (secondary) categories were devised for: a. Those children whose scores on either the Task or Assurance subscales was not quite high enough to place them in the HHH category. This HHH group is expected to perform more similarly to the HHH group than to any other. b. Those children whose scores on the social subscales was not quite high enough to place them in the HLL category. This HLL group is expected to perform more similarly to the HLL category than to any other.

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Description of HSQ items and the subscale reliabilities

The Hypothetical Situation Questionnaire comprised a booklet of 18 items, six in each of the three subscales. Each item consisted of the description of a hypothetical situation (i.e., a very familiar academic school situation) which was followed by the question "what would you do if you were the child in that situation?". The subject followed the words on his booklet while the E read aloud. The following is an example of a hypothetical situation item on the social evaluation subscale: "You are in a new class. Your teacher would like to know all of you better. She asks you to write a page about yourself. How would you like your paper to be read?" The S was to select one of the four answers listed that indicated what he would do in that situation. The four answers ordered in increasing (or decreasing) magnitude with regard to the scored direction of the item on the subscale comprised a unitary scale. The following are examples of hypothetical situation response-choices to the above item: 1. Let the teacher read your paper to herself. 2. Let the teacher read your paper to the class, but without telling who wrote it. 3. Let the teacher read your paper to the class and tell who wrote it. 4. You read your own paper to the class. The S was instructed to follow a procedure of successive paired comparisons to arrive at the final choice. The first two are compared, the one chosen from the two is compared with the third, the choice from that pair is compared with the fourth answer, and the choice from the last pair is the final, scored choice indicating what the S would do in the situation. The paired comparison procedure for selecting an answer and the unitary directional order of the four choices provided a built in check of the reliability of the subscales. The paired comparison insured that the S had paid attention to each possible answer, contrasted to a single choice procedure in which one answer is directly selected from four that are simultaneously examined. This kind of assurance is particularly important in work with children. The directional ordering of the answers gave a check on whether the S's selections were unreliable because of lack of comprehension or attention. That is, a large reversal in choice of answers indicated unreliability. For example, on the item in the social subscale above, the scored direction is such that answer 4 is most social (in the sense of permitting evaluation of oneself by others) and answer 1 least social. If the S selected answer 1 in both the comparisons with answer 2 and answer 3, and then shifted to 4 in the final paired comparison, something was wrong, particularly if this happened on more than one or two items in the subscale. Also if the S had a set and always selected answer 1, or answer 4, over subscale items that were scored in opposite directions, then something was wrong. One half of the items had the answers in the reversed scoring order.

The test-retest reliabilities (2-3 week interval) for individual administration of the subscales were quite satisfactory. For the Social, Task, and Assurance subscales, reliability coefficients were .92, .85 and .72 respectively. However, for economical reasons, the goal was to obtain reasonably satisfactory reliabilities for group administration. Test-retest reliabilities for group administration were clearly lower: Social .83, Task .62, Assurance .60. These were considered satisfactory

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since the final identification of children into the eight HSQ categories was based on the profile scoring of the three subscales. Given the eight continuous categories, i.e., each differed from the next on a continuum from social orientation to a combination of task orientation and self assurance, an S scoring in a given category on first testing could have scored in any of seven other categories in the second testing. Seventy-three percent of the Ss scored in the identical category on both testings, another 16%scored in the category immediately before or after it, and another 11%were within two categories either way. The three subscale intercorrelations were: Social vs. task = .04; social vs assurance = .22; task vs. assurance = .40.

An assessment of the HSQ's reliability with a more heterogenous population was conducted in order to explore the generality of the instrument. Children from three middle to middle-lower socio-economic neighborhood elementary schools; Bellflower Elementary School, N=203, Brockton Elementary School, N=148 and Grandview Elementary School, N=167, were tested. The test-retest reliabilities were similar to those reported above.

Validities

The several tests of the validities of the HSQ subscales and profile scores follow:

Content Validity. After the pools of items were developed on a logical basis for each of the subscales, the final test of adequacy of content validity was established by concensus of three judges who had worked on the construction and revision of the items. Each revision was submitted to a test-retest (2 to 4 week intervals) assessment of the stability of the responses to each of the separate items as well as the summed scores for each scale. Thus, during this work on the content, in addition to improvement of the content validity, the reliabilities of the scales were gradually improved from initially moderate coefficients of stability to those of quite satisfactory magnitudes. Subsequently, all of the selected items had to undergo the test of the unidirectional ordering of the four answers and clarity of comprehension by the Ss, as described in the preceding section on reliability.

Concurrent validity. This was ascertained by obtaining independent ratings by teachers of each child on three ten point rating scales that represented the content of the three subscales. (This same rating scale was administered to each child with directions for the child to rate himself.) Testing was administered in three of the University Elementary School's nongraded, team-taught classroom units. There were regular teachers and student teachers in these units. However, only the regular teachers in the three units rated the children. The teachers' test-retest rating reliabilities were .87, .76, and .56 for the Social, Task and Assurance subscales. The correlations between teachers' ratings and the children's scores on the three HSQ scales were .40, .12, and .29. On the critical test of profile agreements, that is placement of Ss in the eight HSQ categories by the teachers, there was 54% agreement within plus or minus one category. These data indicated a low to moderate degree of

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concurrent validity of the HSQ.

The test-retest reliabilities for the children's self rating scales were .86, .63, and .62 for the Social, Task and Assurance Scales. The correlations with the scores on the corresponding HSQ Scales were: .65, .21, and .40. These results showed some support of concurrent validity for Scales I and III. Thus, overall, the establishment of concurrent validity of the separate scales needs further attention.

Construct validity. The construct validity was measured by the correspondence of the child's actual behavior in experimental situations that were designed to parallel the conditions of the items in the three HSQ subscales to the child's written responses to the hypothetical situations in the questionnaire. The experimental situations were designed to yield a score on each of the three subscales. Thus, a profile score corresponding to that obtained on the HSQ could be computed for the S's actual behavior. Given the eight profile categories, there was 72% agreement, within plus or minus one category, between the profiles for the HSQ and for the actual behavior. This was an unusually satisfactory level for this kind of comprehensive test of construct validity. It gave evidence that there was a good possibility that the children would actually behave in the way they reported they would in the hypothetical situation. A full account of the experimental procedures is given below.

Method

Subjects. The Ss were 59 girls and 63 boys, aged 9-0 to 12-6 from the University Elementary School at UCLA. These children were primarily middle and upper middle socio-economic class families and were above average in intelligence.

Measures. The objective was the difficult one of designing in the laboratory convincing and natural situations that closely represented the hypothetical situations in the HSQ. These experimental situations also had to adhere to the additional strictures of being limited to a total time of 45 minutes while including separate scores for the three constructs underlying the subscales. The measures ultimately utilized for this construct validity experiment were based on a considerable amount of pilot work that involved great attention to the construction and scoring of the tasks. The Es were experienced with children, being two former teachers, and having children of their own. In developing the experimental situations they carefully studied and synchronized both the procedures and the scoring. One bit of evidence of their success was established when it was discovered that inadvertently two Ss had each been tested by both Es due to name duplication on subject-lists. Although testing was six weeks apart, the two Es scored the behaviors of each S almost identically. The three basic constructs tapped in the HSQ along with some corallary experiments were as follows:

HSQ Subscale I. Measures approach or avoidance of social recognition evaluation by others. A high score indicates a child who is interested in social visability. A low score indicates a child either fearful of or not interested in social visability and/or evaluation. Some of the

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experimental situations included to measure this construct were the child's willingness to: (a) put his name on a paper with his personal opinions about a controversial subject (b) tape record those personal opinions and either identify himself or remain anonymous, (c) appear on a panel discussing those opinions in front of an audience ranging in size and importance from peers to university classes.

HSQ Subscale II. Measures degree of task orientation. A high score indicates a task oriented and self-evaluating child who is more interested in the challenges and pleasure of task solution per se than in the attendant social approval that the solution may bring him. A low score indicates a social-approval seeking child for whom others' approval mediates over and above his own self evaluation and whose degree of diligence at working on a task may be commensurate with the degree of social approval it promises. Some of the experimental situations included to measure this construct were the child's willingness to: (a) choose the more challenging and difficult task gradations presented within an experimental situation structured to have minimum social approval possibilities, (b) score his own "perfectly done" paper before turning it in anonymously or have the E score it to gain approval, (c) check for accuracy his completed, but anonymous work before turning it in, (d) volunteer to do additional problems, which range in number and difficulty and again, within a situation structured to offer no social approval.

HSQ Subscale III. Measures degree of dependence on social assurance in conducting a task. A high score indicates a self confident, self reliant child who is inclined to work things out by himself and through to completion. A low score indicates a child lacking in self confidence who tends to lean on others for help, reassurance and support. This construct was scored throughout the total experiment. Tabulation of all the child's requests for help and reassurance. A scoring distinction was made between single requests for help (i.e., where shall I put my pencil?) and gross appeals for help (i.e., How do I do this problem?). Careful attention was given to making the E physically available to the child for help, yet appearing casually occupied so that S could decide how much and how often he needed help. E neither offered nor declined to help the S. The experimental situations were purposely designed to have a range of ambiguity and difficulty built in to ensure that all Ss would be in need of some help. Subjects' queries were tabulated, and whenever possible a verbatim account was taken.

Procedures. The appearance of the experimental room was designed to impart a feeling of serious research business. In sight, around the room were boxes variously labeled, "Educator Research," "Child Opinion Survey," etc. After each child was brought from his classroom the E explained the nature of the study:

> The teacher training department has asked us to help them. They would like their student teachers to know as much as possible about children--about how they feel, and what they do in different situations. We figured that the

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best ways to find out about children was to ask the children themselves. The first thing these Educators would like to know is how do children feel about disagreeing with their parents or teachers. You can help us gather this information by filling out this "Child Opinion Survey."

Subject was then given an official looking form and a pencil.

Directions for filling out the form were printed on the top of the form. E purposely gave no more specific instructions about how to complete the survey, but subsequently answered and tabulated all S's questions. The survey asked four questions dealing with the child's views about obedience and conformity to parental and school strictures. Two of the questions required that S underline a favored response and two required a short essay response. Upon completion of the survey, Scale I scorable items were then initiated.

E asked:

> "You may write your name on the paper if you'd like to, but you don't have to if you don't want to.
> (Score on Scale I: No name = 0; Name =1)

E continued:

> Now that you have given us your opinions, we need to store the information for the student teachers to use. It's up to you how you want your opinions recorded. You can decide to hand them in on this paper, or your opinions can be tape recorded. What do you think you'd like to do?
> (Score on Scale I: No tape = 0)

If S decided to tape record his opinions, these additional scorable questions were asked:

> Would you like me to read the opinions on your paper into the tape recorder, or would you like to read them into the tape recorder yourself?
> (Score on Scale I: E read =3; S read =5)

If S was willing to identify himself on tape by giving his name (or having E give his name) an additional point was scored.

After taping the opinions E continued:

> The whole topic of children's disagreement with "authority" is of great interest these days. Educators want to get some childrens' discussion groups going on this very subject. They want to organize some "Key Child Discussion Groups" and

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have the groups appear before different audiences to discuss this subject. I have a Sign-up sheet that you can fill out if you are interested in being in one of these discussion groups.

A loose-leaf notebook labeled, "Key Child Discussion Groups: Educator Series" was opened with a page of choices for S to consider. Scale I Scores given are listed next to choice.

Directions: Please check which discussion group you are willing to be in:	Score: Scale I
1. I would rather not be in a discussion group	(0)
2. I will be in a discussion group where the audience will be my own classmates	(2)
3. I will be in a discussion group where the audience will be a 6th grade class at another school	(4)
4. I will be in a discussion group where the audience will be student teachers in an Education class at the University	(6)

Subscale II items were scored next. Since Scale II constructs are concerned with degree of task orientation compared to social approval orientation, a concerted attempt was made to minimize the child's personal identity so that his subsequent experimental decisions to work persistently at difficult tasks reflected a genuine task orientation rather than a spurious effort directed at calling the attention and approval of E and/or the "prestigious" Educators. Therefore, it was early impressed upon Ss that this study was concerned with the nature of Group behavior rather than in his individual behavior. This minimization of the importance of his personal identity was reinforced throughout the experiment by Es frequent comments of "just write your age, do not write your name on the paper," and "this is an age-ability study," etc. To further minimize the possibilities of S perceiving E as 'social-approver', the children were directed to put their completed work directly into the "Educator Research Boxes" instead of handing it to E.

E continued:

> The Educators are not only interested in childrens' opinions but in childrens' problem-solving abilities, and how they are related to age. We are collecting some samples of different aged childrens' problem-solving abilities. The first task we are interested in is "How does a child your age go about following complicated directions." As you can see, there are three envelopes containing "directions to follow". One is "easy," one is "medium" and one is "hard". You may pick any one of them that you want to. Only your age will go on the paper, not your name. Pick out which directions you will follow.

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	Score: Scale II
Easy Directions to Follow	(0)
Medium Directions to Follow	(2)
Hard Directions to Follow	(4)

Actually identical directions were in all of the envelopes. In order to facilitate potential dependency behavior tendencies, the directions were purposely tricky to follow. It was primarily in this part of the experiment that Subscale III Constructs were scored (i.e. tabulation of Ss requests for help and reassurance). The directions contained within the envelopes listed 15 specific instructions beneath the following caption:

> Do everything that the instructions tell you to do, and nothing that it doesn't tell you to do.
> Sample items: 1. Starting on the first horizontal line, number in even sequence on the right side of the red line.
> 2. Fold your paper in half from bottom to top
> 3. Turn your paper over top to bottom
> 4. Write your given name in the bottom right hand corner

Upon completion of the directions, E told child:

> Before you put your paper in the Research box you can check over your work first if you want to, but you don't have to check it if you don't want to.
> (Score on Scale II; Check work =2)

E continued:

> The next thing the Educators are interested in is how well children of different ages can put things in order. On this piece of paper is a list of names. Arrange these names according to alphabet. Just put your age on the paper. Do not put your name. Tell me when you are finished.

A purposely very easy list of 10 names was used..easy enough to guarantee that all Ss could successfully complete this task correctly. This "well-done" task was a set-up for the next scorable Scale II item which dovetailed perfectly with the HSQ item which queries who the child wants to score a very well done paper..himself, or others of varying importance. The E next asks:

> Before we put your alphabetized paper in the Research Box you can score your paper yourself with an answer sheet that I'll give you, (while I work on these papers over here) or, if you'd like I'll score your paper for you.
> (Score on Scale II: Child scores =2)

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S is again given a choice of three levels of task difficulty to work on with the caution that this alphabetizing task will be more difficult than the one he just completed, and now he will be timed. With the constraints of time and difficulty and no promise of social approval this provides a fairly good measure of S's degree of task orientation:

	Score: Scale II
Easy Name Ordering	(0)
Medium Name Ordering	(2)
Hard Name Ordering	(4)

E's instructions for the last experimental situation:

> The Educators also want us to give them samples of other Problem-Solving Abilities. On this piece of paper are four kinds of problems. Look them over and decide if you would like to do any of them. You can decide to do none at all, or as many as all of them. Only your age will be written on the paper, not your name.

The four sample problems presented to Ss appeared challenging and time consuming. Subjects had already been involved in 40 minutes of anonymous problem solving. Would they now make a further task committment despite fatigue and minimal social approval? Beneath the outlined problems presented to the children was this question:

> How many of these problems will you do?
> Put a circle around the number of problems that you will now do
>
> (The number circled, 0 ,1,2,3, or 4, received a score of 0,2,4,5, or 6, respectively, on Scale II.)

The children were allowed to work only about five minutes more on the problems. They were thanked and returned to their classrooms.

Results

Scores for the three constructs were divided into the five levels: low, medium low, medium, medium high and high, so that each S had a profile score similar to the HSQ profile categories, i.e., High, High, High, = HHH; High, Low, Low=HLL; etc. Each S was scored in one of eight different categories. The measures of construct validity (CV) was the proximity between the child's HSQ profile category obtained on the pencil and paper test and his CV profile category based on his actual behavior. Given eight continuous categories from social orientation on the one hand to a combination of task orientation and self assurance on the other, an S scoring in a given category on the HSQ could have scored in the same or any of seven other categories in the CV testing. Thirty-eight percent of the Ss scored in the identical category on both measures and 33% scored within one category of the other. Thus, 71% of Ss scored identically or with only one category discrepancy. This demonstrates quite good construct validity of the HSQ profile categories.

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Percentages of S Scoring in Identical HSQ and CV Profile Category or with One Category Discrepancy

	Identical	One Category Discrepancy	Total
N = 122	47 (38.5%)	40 (32.8%)	87 (71.3%)

The HSQ proved to be a more accurate estimate of childrens' behavior than did teachers' ratings of those same children. Comparison between teachers' ratings (TR) on the same constructs measured by the HSQ and the CV experiment for one classroom of 52 of the 122 children, rated by three teachers, yielded these results:

	Identical Category	One Category Discrepancy	Total
TR vs. HSQ N = 52	10	18	28 (53.8%)
TR vs. CV N = 52	17	15	32 (61.5%)
HSQ vs. CV N = 52	22	17	39 (75%)

Discussion and Summary

Construct validity was assessed by the proximity of a child's actual behavior to his professed test-questionnaire behavior of the same construct. A carefully designed experiment composed of the main elements of the questionnaire's hypothetical situations placed each subject in actual experiential situations which called for a series of commitments and behaviors. The three constructs focused upon were Social orientation, Task orientation and Self Assurance. Scores on each could range from low, medium low, medium, medium high, and high. Depending upon the arrangement of the scores of the constructs a child could be placed into one of eight profile categories that would be descriptive, characteristic and predictive of certain kinds of behaviors. This study examined the construct validity of the HSQ by ascertaining the proximity between the HSQ and the construct profiles. The findings were highly supportive of the HSQ's construct validity since 87 of the total 122 subjects had profiles that were either identical or one category discrepent. This similarity between a child's actual behavior and his responses to the hypothetical situations was, interestingly enough, of a closer magnitude than the teacher's estimates of the child's behavior and his actual behavior. This finding suggests that the HSQ is a more accurate assessor of a child's situational responses than the superior trained teachers at a University Demonstration School, even when those teachers were making a diligent and focused attempt to rate children on specific dimensions.

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Predictive Validity. Most of the research on validity was under this category since our interest was in predicting how the children in different categories of the HSQ perform in independent situations. Here, the experimental conditions were designed to be different from the hypothetical situations in the HSQ, in contrast to the test of construct validity in which the situations were designed to duplicate the hypothetical situations. The experiments introduced independent variables such as evaluative vs. nonevaluative conditions, social vs. nonsocial cues, and relevant vs. irrelevant cues.

A. Effect of social or task orientation and evaluative or nonevaluative situations on performance (A more complete report of this study may be found in Nakamura & Finck, 1973).

There is ample evidence that social factors and the possibility of being evaluated can affect the performance of subjects on a task administered in an experiment. This is shown by the extensive body of literature on such topics as social reinforcement, test anxiety, modeling and imitation and experimenter effects. There is also evidence that children may be differentiated on their tendencies to attend and be more responsive to the task per se in contrast to being more responsive to the social components in an experimental situation.

The present study explored the effects on childrens' performance of their predispositions to be task or socially oriented. These predispositions were assessed by the HSQ. The utility of these identifications for making differential predictions of performance in two types of situations was investigated. On the basis of combinations of their scores on the three subscales of the Questionnaire, children were divided into 8 categories. The three subscales were designed to measure social orientation, task orientation, and self assurance.

Children considered to be socially oriented are sensitive to social stimuli and/or to potential evaluation by others; children considered to be task oriented are primarily interested in the task per se, likely to be achievement oriented, and are less concerned with the possible social-evaluative implications of their task performance; children considered to be self assured are generally confident, competent, and relatively unconcerned and not needing of others' evaluations, reassurance and help. It was expected that children differentiated on the basis of specific combinations of these three characteristics would perform in a learning task situation in predictable ways, depending upon whether it was structured as an evaluative or a fun situation.

A similes learning test was administered under the instructions that either it was a test of Ability (Evaluative) or that the E wanted to find out if the game was Fun (non-evaluative). The factorial design of the experiment involved Categories (HSQ groups) X Sex X Treatment (Fun vs Ability) X Task Difficulty (Hard vs. Easy Similes). The main predictions concerned differential performances by the three main profile categories of: (a) HHH--the overall effective category (b) HLL--the primarily social category and (c) LHH--the primarily task oriented category. HHH was expected to perform better in the Ability instructions than in the Fun instructions, appropriate to what the situations called for. That

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is, in the Ability situation they would perform accurately and in the Fun situation they would be able to let go and have fun even at the cost of making errors. Furthermore, in the Ability condition, they would perform as well or better than all other categories of Ss. The HLL children were expected to perform better in the Fun than in the Ability situation, i.e., the opposite of the HHH Ss. On tasks in which social cues are irrelevant, their sensitivity to social cues and concern with evaluation would disrupt their behavior. The reasoning is consistent with that presented by Mandler and Sarason (1952) in regard to test anxiety and interfering responses. The LHH Ss were expected to perform equally proficiently in the Fun and Ability conditions and as well or better than all other categories. Because of their task and achievement orientation, they would try to do well even in the Fun condition.

Method

Subjects. The subjects were 204 white upper middle class children aged 9 years 6 months to 12 years 4 months from the University Elementary School. They were divided into the eight major HSQ profile categories with equal number of boys and girls in each group.

Measures. The Hypothetical Situation Questionnaire (HSQ) was comprised of a booklet of 18 items, six in each of the three subscales. A modified version of Pearson and Maddi's Similes Performance Inventory (1966) was the learning task used in the Fun and Ability situations. This consisted of one set of 30 cards with a simile stem presented on each card and a second set of 30 cards with five possible stem endings on each card. An example of a simile stem is "Limp as _____" with the five possible endings to that stem, :1) a dish, 2) a lump, 3) a blimp, 4) a towel 5) a bag." An Easy and a Hard set of 30 stems and 30 endings were used. On the Easy set, the correct ending to be learned was the common ending towel. On the Hard set, the correct ending to be learned was the unusual ending "Limp as a dish."

Procedure. The HSQ was administered to five classroom groups ranging in number from 25 to 57. In brief, the children were told to:

> Read the stories in this booklet and decide what you would do if you were the person in the stories. At the end of each story there are four endings. You are to pick out the ending that tells best what you would do.

E read each story and the ending choices aloud. Ss were reminded that this was not a test, that there were no wrong answers and to be honest.

The Similes task was administered individually. Half the boys and half the girls in each HSQ category were randomly assigned to the Ability situation and the Fun situation. Procedures were identical in the two situations except for what the E told the S about the reason for doing the task. In the Ability situation, the S was told:

> "We think that the children that go to this school are much smarter than children who go to other schools. We decided to go ahead and try to prove it. So we are going

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> to give this test to the students here to see if the children here really are the smartest."

In the Fun situation the S was told:

> We are trying to make up some language activities that will be good for children to learn. We've made these activities in the form of a game, because if they're fun to do, then the students will really use them and be learning at the same time. But before we go to the expense of having this game published, we want to be sure that these activities are really fun to do. Try out this game and then give me your opinion about whether you think it's a fun thing to do or not.

Following explanation of the task the Ability Ss were told that their score would be the number of correctly remembered words and the number of times it took them to go through the set to get them all right. The Fun Ss were told that the game's object was to try to remember the simile endings and to see how many times it took to go through the set before getting them all right. When they finished the game E would then ask them their opinion about whether they thought it was a fun thing to do. Only the Ability Ss were told that their thinking time was limited to 5 seconds, although the maximum interval for simile card presentation was 5 seconds, for all subjects. The Easy similes were followed by administration of the Hard similes.

Two scores were tabulated for each Easy and Hard simile set: (1) the number of trials required to reach criterion of 30 simile pairs learned without error and (2) the total number of errors made over the trials. If an S went through 10 trials without reaching criterion, testing was discontinued. Thus the maximum score for trials was 10.

Results

The predictions made about the differential performances of the three main HSQ profile groups of HHH, HLL and LHH were clearly supported as shown by the mean error scores for the hard simile learning task (see table). Performances of the other five categories of Ss, not reported here, were also in accordance with the specific hypotheses about their performance.

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Mean Errors to Criterion and Mean Trials to Criterion on Learning Hard Similes Under Fun and Ability Treatments For Three HSQ Categories of Ss

	Category					
	HHH		HLL		LHH	
Treatment	Fun	Ability	Fun	Ability	Fun	Ability
Errors M	53.05**	34.20	56.44**	73.94	36.70	34.90
Errors SD	14.60	9.58	11.65	20.60	7.60	14.00
Trials M	7.20	6.00	7.06*	8.25	5.70	5.50
Trials SD	1.47	1.45	1.06	1.70	0.66	1.43

Note: Difference between pairs of Treatment means:

** $p < .01$
* $p < .05$

Discussion

The results indicated that it is possible to distinguish children on predispositions such as social and task orientation and self assurance sufficiently well to predict their behavior in certain specific situations. The predictive strength of the measures of these characteristics was demonstrated because of at least two conditions. First was the use of combinations of the three predispositions to define several categories of children in contrast to differentiating them on only one or two dimensions. Second was that the criterion measure of performance was obtained in situations that contained stimulus conditions relevant to the predispositions. This indicates that research on specific personal characteristics may be productive when experiments are designed to assess the interactions between traits and situational variables that are relevant to each other.

Insofar as children are distinguishable on categories defined by the Hypothetical Situation Questionnaire, it should be possible to develop teaching situations and procedures that specifically delineate such factors as effective attention engaging stimuli, nature of reinforcers, timing of reinforcements, and initial and graded task difficulty, to optimally facilitate motivation and effective performance.

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Predictive Validity Experiment

B. Social evaluation orientation, task orientation, and deliberate cuing in experimenter bias effect (modified dissertation abstract of Judy Lee Todd, 1971).

Rosenthal (1966) has demonstrated in several studies an Experimenter Bias Effect (EBE): that is, experimenters in a variety of experimental situations tend to obtain results in line with their expectations or hypotheses. Having ruled out deliberate bias or error, Rosenthal concludes that subtle and unconscious cues in the experimenter's behavior communicate his expectations to the subjects, who then comply with them for various hypothesized reasons. Thus the EBE may be viewed as a source of systematic error or as a phenomenon of intrinsic interest to psychology. This study addresses itself to the latter viewpoint, asking what cues are involved in the communication of EBE and what about the subject makes him responsive to them.

Nakamura has devised the Hypothetical Situation Questionaire (HSQ) for children aged 8 to 12. Validational evidence suggests that profile scoring of the HSQ discriminates children who are social evaluation oriented (profile HLL on the HSQ) and presumedly responsive to social cues from children who are task oriented (profile LHH) and less responsive to social cues. It was predicted that the greater contributors to EBE would be the HLL children as compared to the LHH children. In addition, the role of a systematically varied, deliberate cue in EBE was investigated.

The general outline of the experimental procedure approximated Rosenthal's with modifications for children. Six paid experimenters administered a photo-rating task individually to eight subjects: male and female HLL and LHH subjects under two different expectancies as to how each subject would perform. The photo-rating task consisted of 18 photos of male adult faces. Children guessed how much each man won in a poker game on a scale of lost $10 to won $10, approximating Rosenthal's scale of -10 to +10 of failure-success. Three experimenters were told to expect ratings of +5 from some subjects and -5 from others. Another three experimenters were trained to give a deliberate cue (a slight leaning forward) in line with these expectancies.

The results demonstrated EBE with HLL children and not with LHH children, as predicted. However, contrary to prediction, the cue given by the experimenter proved to be negatively and not positively reinforcing. The trends produced by the cue in the photo-ratings over trials in HLL subjects, although opposite in direction, were similar in degree to those produced by experimenter expectancy alone. This suggested that subtle and blatant cues were equally effective in producing EBE.

The role of determining subject type in reducing systematic error from EBE and the broader implications of EBE were discussed. Many writers discuss the importance of the complex process of expectancy, covert communication, and unintended influence in all social situations, including psychotherapy and the psychological experiment. It is suggested that Rosenthal's paradigm is a useful way to investigate

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variables in this complex process.

The results of this experiment provide additional support of the validity of the HSQ and the potential utility of its constructs for studying relations between children's response tendencies and their behaviors in different situations.

C. Additional studies related to validation of the HSQ

1. Task orientation versus social orientation in young children and their attention to relevant social cues.

Since the HSQ is a verbal test, it is not suited to children of younger years. The work to date has been with Ss 9 years and older. However, it was of interest and important to determine if these characteristics exist at the earlier ages, or when they do become reliably established. An experiment that addressed these issues was conducted on somewhat younger children (Ruble & Nakamura, 1972, reprints attached with report.)

The Ss were 7 to 10 year old children in a largely middle to lower middle class public school in the West Los Angeles area. The study examined how relevant cues given by an E differentially affected performance of task vs. socially oriented children on two game like tasks. One was an object assembly task (following Turnure & Zigler, 1964) and one a concept identification task. The distinction between task and socially oriented children was made on the basis of field dependence-independence, measured by the Gerard rod and frame test (Gerard, 1969). There is evidence that field dependence-independence is associated with a social vs. task orientation (Fitzgibbons, Goldberger, & Eagle, 1965; Konstadt & Forman, 1965; Messick & Damarin, 1964; Witkin, Dyke, Faterson, Goodenough, & Karp, 1962). A field-dependent individual is supposedly very responsive to social or evaluative aspects of a task situation compared to the field-independent person. The results of the study supported the expectation that the field-dependent children would be more responsive to social cues than the field-independent children.

However, the findings that were of most interest in regard to further research was the nature of the eye-glancing behavior of the Ss. On the Turnure and Zigler task situation in which the S worked on one puzzle while the E worked on another, it was expected that the S who looked away from his own puzzle and at the E working on her puzzle would do more poorly on his task than the S who did not look away. But when the S was next given the puzzle that E had worked on, the S who had looked at E's completed puzzle, which, shown several times, should do better on the second task relative to his performance on the first task; and better than the S who had looked at E's work. The field-dependent Ss did glance more at the E, as expected, but contrary to expectation, they did not do better on the second task.

On the other hand, in their performance on the concept identification task in which E gave relevant information by looking repeatedly at the correct choice, the field-dependent Ss did better than the field-independent Ss, as expected. This apparent discrepancy with the previous task was resolved by the examination of the glancing behavior of Ss during the Turnure and Zigler Puzzle tasks. Ratings had been

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obtained on the direction of glancing--at E or at the task E was working on. The field dependent Ss were glancing predominately at E and not at the puzzle E was working on. Thus, the glancing was not calculated to gain relevant information about the puzzle. In contrast, on the concept identification task the relevant information was available by looking at the E's face and the field dependent Ss benefited from their socially oriented glancing.

The results of this experiment show that disposition to be task or socially oriented can be defined by nonverbal behaviors, such as glancing, in children. These characteristics are also related to a measure of field dependence-independence and also to effectiveness of performance in concept identification. Children who glanced most and were field dependent performed well when a social cue was relevant to accurate performance while children who glanced least and were field independent did less well when the social cue was relevant. Contrary to most previous reports that showed field dependent Ss to be inferior in task performance compared to field independent Ss, this research found that under circumstances where social cues are relevant, the reverse may occur.

2. Some questions and observations about field-dependent-independent children from the perspective of the HSQ profile categories.

The conclusions in the reports of the considerable amount of work in field-dependence-independence imply that it is better to be field independent than to be field dependent insofar as the former have performed better on a variety of tasks. That is, positive connotations are associated with field independence and negative ones with field dependence (Spotts & Mackler, 1967). Furthermore, findings have indicated that the socially oriented and females are relatively field dependent (e.g., Fitzgibbons, Goldberger, & Eagle, 1965; Garai & Scheinfeld, 1968).

One could reasonably be concerned about the negative connotations thus associated with people who are socially oriented and females. Such simplistic conclusions could be misleading. We wondered whether a consideration of people across more numerous and complex categories such as those of the HSQ may not provide a different and less negative view of field-dependent persons. Of particular interest, in regard to this question, were our children who scored high on both social and task orientation, the HHH profile. These were presumed to be our most effective persons since they were differentially responsive to both social and task aspects of situations. It was expected that many of these effective people might score in the field-dependent direction. Also noteworthy is that this HHH effective group was composed of equal proportions of boys and girls in the general school population. In contrast, it was expected that the LHH profile task oriented children would be representative of the high performing persons who typically score in the field-independent direction and to whom are attributed the positive connotations. Consistent with that literature, a large proportion of the LHH group in the school population are boys. In further contrast, the typical field dependent persons reported in the literature who perform poorly on criterion performance tasks and who receive the negative connotations were expected to be represented by the HLL, primarily socially oriented, children. A large proportion of this group in the school

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population are girls. This too is consistent with the literature.

One may also wonder whether some or much of the source of the poorer task performance by field-dependent Ss that is reported may be attributable to the types of criterion tasks used in the experiments. Often they are of the structured, logical, analytical problem solving type. Rarely do they require social awareness or sensitivity to relevant social stimuli. Would the performance outcomes differ if tasks were used that included relevant social cues for solution? The results of Ruble and Nakamura (1972) cited earlier (reprints attached) suggest that it would.

Method

Subjects

The Ss were 56 boys and 71 girls from the University Elementary school at UCLA. Their ages were 9-0 to 12-6 with a mean age of 10.4 years. They were subdivided into six major HSQ profiles: HHH--both social and task oriented, N = 35; HLL--primarily socially oriented, N = 42; LHH--primarily task oriented, N = 11; LLL, N = 16; LHL, N = 8; and HLH, N = 9. The focus of our interest will be those children in the first three profile categories.

Measures

A portable Rod and Frame Test (RFT) developed by Nickel (1971) was one of two measures used to assess field-dependence-independence. This test has been validated satisfactorily against the Witkin Embedded Figures Test and Gerard's portable Rod and Frame test (Gerard, 1969). Nickel's test is smaller, more easily manageable than Gerard's test and can be administered by one E rather than the two Es required by Gerard's test.

Jackson's (1956) revision of Witkin's Embedded Figures Test (EFT) (1962) was used as the second measure of field dependence-independence. This revision shortened the testing time by half while maintaining .96 reliability.

Procedures

Both measures were administered individually in one session by an E who did not know the HSQ profile scores of the Ss. The RFT was administered first with these instructions:

In a minute, I'm going to have you put on these goggles, but before you do, I'll tell you what you will see inside this box. It's going to be dark inside, but you will see a shiny white frame, like this one (E holds up duplicate frame) and you will also see a white rod, like this one (E holds rod inside frame). I want you to tell me when the rod is straight up and down, like the walls of this room. It may be

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straight or it may be crooked, and if it looks crooked, tell me which way to move the rod in order to make it perfectly straight. E demonstrated and gave further instructions about what the S was to say to direct E how to move the rod to make it straight. Subject put on the goggles which attached to the light-proof box and E set the rod and frame in a pre-programmed left and right degree variance of from 0 to 40 degrees for eight trials. The rod was moved one degree at a time, in the direction desired by S. When S said, "move it much more," the rod was moved five degrees. When S said that the rod appeared straight up and down, the position of the rod was recorded and then E set the rod and frame for the next trial. The Score for each subject was mean of the sum over 8 trials of the absolute deviations in degree arc of his placement of the rod from the true vertical.

Following the Rod and Frame test, Ss were administered the Embedded Figures Test with these instructions (these are briefer than the actual):

I am going to show you a series of colored designs. Each time I show you a design, I want you to describe it in any way you wish. I will then show you a simple form which is contained in that larger design. You will then be given the larger design again and your task will be to locate the simple form in it. There will be 12 designs, and in every case the simple form will be found somewhere in the larger design. Work as quickly as you can since I will be timing you.

Additional clarifying instructions and two practice cards preceded the test. There was a time limit of three minutes per design. Scoring was obtained on the following: Mean solution time in seconds over the 12 EFT cards, total number of correctly identified forms, total number of errors (i.e., incorrectly identified forms) and, total number of times that S gave up (i.e., S gave up trying before his three minute time limit was up). In addition to task performance scores, Experimenter tabulated Ss verbal behavior on a behavioral unit rating sheet. Verbal behavior was rated on the basis of Ss comments and questions indicating (a) task concerns (b) need for help and reassurance and (c) expressions of self confidence.

Results

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The correlation between the RFT and EFT was .50.

The main results are tabulated below for the HHH, HLL, and LHH profile groups.

		RFT	EFT		
HSQ Profile	Sex	Degrees Deviation	Mean Time in secs.	No. Correct Figures	Total Errors
HHH	Boys n=12	5.27	95.93	7.75	11.67
	Girls n=35	4.09	99.14	8.26	11.74
HLL	Boys n=22	3.58	92.23	8.18	9.36
	Girls n=20	4.49	110.84	6.80	12.45
LHH	Boys n=6	1.67	60.79	10.50	8.00
	Girls n=5	2.95	73.68	9.80	5.60

The results are quite consistent with expectations generated from the rationale underlying the HSQ profile categories. The scores of the HLL and the LHH groups do appear to correspond to the usual kinds of differences reported in the literature. The HLL--primarily socially oriented group scored in the field-dependent direction and the LHH--primarily task oriented group scored in the field-independent direction. Furthermore, the boys were consistently more field independent than the girls.

The most interesting finding was that of the HHH--both socially and task oriented, group that is considered to comprise very effective children. Such effectiveness was clearly demonstrated in the earlier cited study by Nakamura and Finck (1973). In that study, the HHH group performed as well as the effective LHH--task oriented, group on the similes learning in the ability condition. However, on field dependence, they were clearly more field dependent than the LHH task oriented group and as much so as the HLL socially oriented group. The boys and girls in this HHH group, moreover, did not differ as they did in the other two groups.

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This appears to be an important finding since it shows that there are effective children who score as field-dependent Ss. These people do not deserve the negative connotations implied by many studies. These Ss who scored in the field-dependent direction are very capable children. Thus, greater caution appears to be necessary in describing the attributes of field-dependent and field-independent people.

Addendum to preceding experiment

Although the primary focus of the experiment was the investigation of the relation between the HSQ profile categories and the dimension of field-dependence-independence, the additional measure of the Ss' verbal behaviors tabulated during task performance of the EFT resulted in support of the construct validity of the HSQ. The three classifications of verbal behavior that were tabulated were: (1) Verbal behavior indicating task concerns, e.g., information seeking to clarify task procedures; (2) verbal behavior indicating need for help and reassurance, e.g., expressions of doing badly, queries about relative performance of others, anticipation of failure; (3) verbal behavior expressing self-confidence, e.g., expressions of enjoyment and interest in task, anticipation of success.

It was hypothesized that (a) the primarily socially oriented HLL group would show a greater frequency of need for help and reassurance than would the HHH and LHH groups that represented the more effective Ss; (b) that the more social of the two effective groups, the HHH, would have a greater frequency of all kinds of comments, except those of task concern, than the LHH group; (c) that the primarily task oriented LHH group would have the highest number of task concern comments of the three groups; and (d) that the primarily socially oriented HLL group would have the greatest total frequency of all kinds of comments. The results tabulated below indicate that all these hypotheses were supported.

Verbal Behavior During EFT Testing

HSQ Profile	Task Concern	Need for Help & Reassurance	Self Confidence
HHH n=28	.21	2.75	.89
LHH n= 6	1.00	1.50	.17
HLL n=38	.71	3.92	1.03

3. Convergent validity of the HSQ subscales

An assessment of the convergent validity of the HSQ subscales:

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assurance
1). social, 2). task, and 3)., was made by application of the multitrait-multimethod analysis. The traits were the three subscale factors of the HSQ. The methods were the measures by the HSQ,
the behaviors of the children in the laboratory situations constructed to assess the construct validity of the HSQ, the teachers' ratings of the children on each of the HSQ traits, and the childrens' self ratings on the HSQ traits. The intercorrelation matrix is shown on the next page.

The entries in the triangular boxes give the intercorrelations of the three subscale-traits within each method. Except for the teachers' ratings, the subscales are fairly independent of each other. Another exception is the clearly significant correlation between the task (Q_1) and assurance (Q_2) scales of the HSQ. This correlation was the main reason for using the combined scoring of these two subscales in the establishment of the continuum across the several profile categories of the HSQ (Nakamura & Finck, 1973).

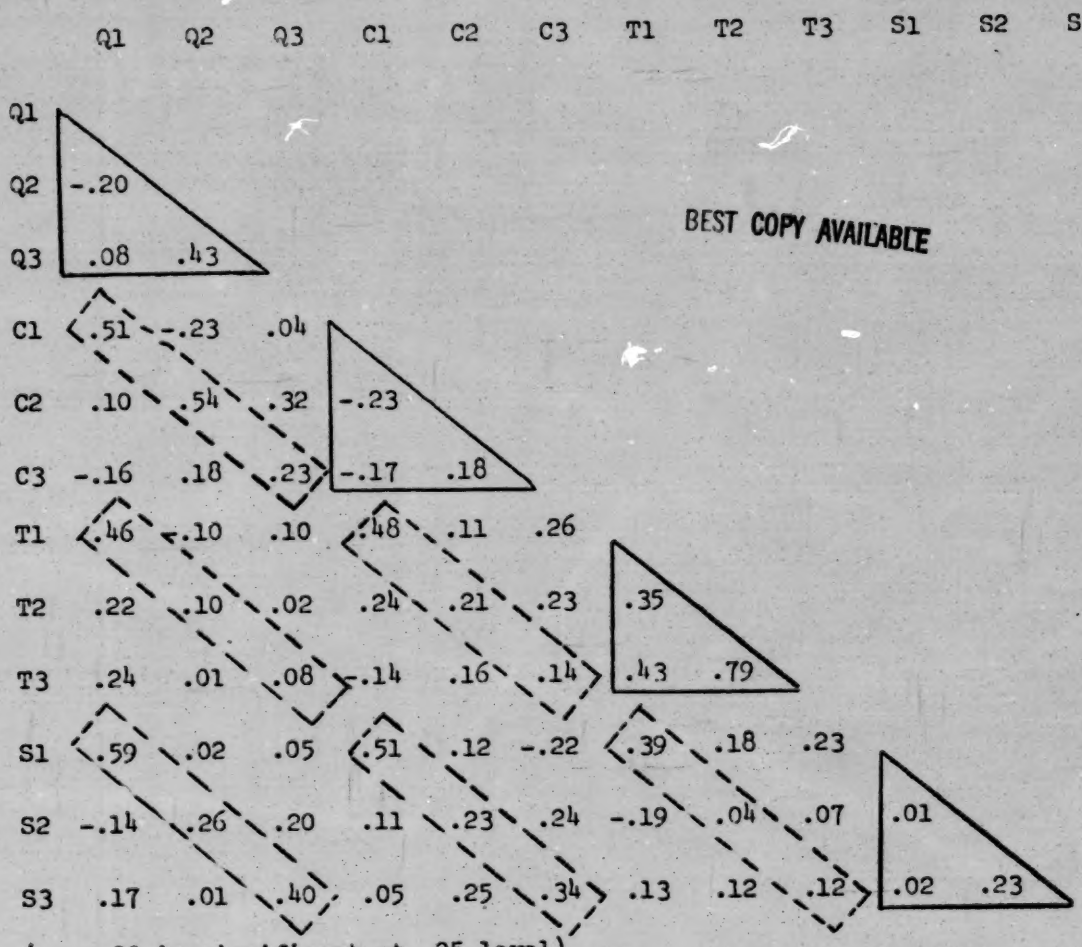
The diagonal entries in the broken line, rectangular boxes gives the intercorrelations of the corresponding traits across the methods. Ideally, these correlations would be large and significant and the remaining correlations would be nonsignificant. The data show that the results for the HSQ (Q_1, Q_2, Q_3), the behavioral measures (C_1, C_2, C_3), and the childrens' self ratings (S_1, S_2, S_3) are moderately satisfactory and the measures for the teachers' ratings fare least well and are generally unsatisfactory. The data for Trait 1 (social) holds up very well across all methods. Traits 2 and 3 are much weaker. Overall, the results provide some support for the validity of the HSQ subscales.

4. Work in progress

a. Study of whether the differential performances among the Ss in the HSQ profile categories can be demonstrated on nonverbal as well as on verbally and primarily cognitively mediated variables.

b. Preliminary work indicates that the children differentiated on the HSQ categories when tested on the HSQ at ages 9 to 12 years of age were also differentially described by their parents in interviews that were condicted when the children were 3 1/2 to 4 1/2 years of age. This suggests that certain variables that differentiate the children on the HSQ had some correlates that were identifiable as early as ages 3 1/2 to 4 1/2 years.

Convergent Validity of the HSQ
N=52



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(r =.23 is significant at .05 level)

Legend: Q1, Q2, Q3 = Scales I, II and III of HSQ test.
C1, C2, C3 = Laboratory situations constructed to parallel items in HSQ Scales I, II, III.
T1, T2, T3 = Teachers' ratings of the children on the three HSQ traits.
S1, S2, S3 = Children's self ratings on the three HSQ traits.

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